

# Updates to the PCB Exposure Estimation Tool and Exposure Levels for Evaluating PCBs in Indoor School Air



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# PCB Exposure Estimation Tool

## Purpose:

- Developed in 2009 as a simple tool to estimate PCB exposure from school and non-school pathways
- Calculates the maximum school indoor air PCB concentrations ( $\text{ng}/\text{m}^3$ ) that do not exceed the RfD, considering other school and non-school pathways
- Enables users to input site-specific values and tailor screening limits to local conditions



# PCB Exposure Estimation Tool

## Exposure Pathways:

Non-school Pathways		School Pathways	
<u>INDOOR</u>	<u>OUTDOOR</u>	<u>INDOOR</u>	<u>OUTDOOR</u>
Inhalation	Inhalation	Inhalation	Inhalation
Dust Ingestion	Soil Ingestion	Dust Ingestion	Soil Ingestion
Dust Contact	--	Dust Contact	--
Diet (fixed value)		--	

# PCB Exposure Estimation Tool

## Key Assumptions:

- Uses RfD for Aroclor 1254 because it provides the most conservative estimates
- Assumes all other school exposure concentrations (e.g., dust, soil, outdoor air) are the same as background
- Uses typical (average) contact rates
- Dietary intake of PCBs based on FDA Total Diet Study Data





# PCB Exposure Estimation Tool

## History:

- Version 1.1
  - Developed in 2009
  - Used FDA dietary data from the 1997 Total Diet Study
  - Formed the basis of the ***Public Health Levels (PHLs) for Indoor School Air***
  - PHLs were posted on EPA PCB website
- Version 1.2
  - Updated Tool in 2010 and revised in 2015
  - Uses FDA dietary data from the 2003 Total Diet Study
    - » Dietary values are lower than in Version 1.1
  - Forms the basis of the updated ***Exposure Levels for Evaluating (ELEs) Indoor School Air*** (formerly called PHLs)



# ELEs for PCBs in Indoor School Air

- Revised PHL terminology to ***Exposure Levels for Evaluation (ELEs) of PCBs in Indoor School Air***
  - Better reflects intended purpose
  - Should not be interpreted nor applied as “bright line” or “not-to-exceed” criteria
  - May be used to guide thoughtful evaluation of indoor air quality in schools
  - Updated values and terminology posted to website  
[http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/exposure\\_levels.htm](http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/exposure_levels.htm)
- Both PHLs and ELEs represent the maximum school indoor air PCB concentrations ( $\text{ng}/\text{m}^3$ ) that do not exceed the RfD, considering other school and non-school pathways

# ELEs for PCBs in Indoor School Air (ng/m<sup>3</sup>)

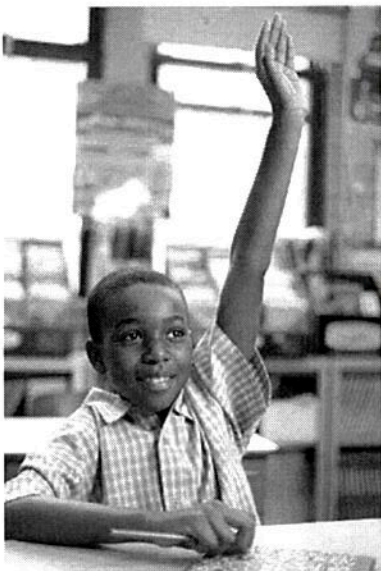
**Values based on Version 1.1 and Version 1.2 of Tool**

<b>Age group (years)</b>	<b>Version 1.1 (rounded values)</b>	<b>Version 1.2 (rounded values)<sup>1</sup></b>
1 to <2	70	100
2 to <3	70	100
3 to <6	100	200
6 to <12	300	300
12 to <15	450	500
15 to <19	600	600
Adult	450	500

<sup>1</sup> Rounded to one significant figure.

# PCB Exposure Estimation Tool & ELEs

## Uncertainties and Limitations:



- Used oral RfD for inhalation pathway
- Based on Aroclor 1254
- Some data suggest PCB indoor air profiles may be more similar to Aroclor 1016
- Used generic background and school assumptions – site specific values are preferable
- Does NOT link PCB exposures to specific PCB sources



*Thank you for your attention!*



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